The Boeing Company
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107E-6047-05
October 31, 2005

Mr. Rich Nussbaum
Permits Section
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

BOEING

Encl: (1) Interim Action Remedial Excavation Work Plan, Solid Waste Management Unit 17

Dear Mr. Nussbaum:

Enclosed are two hard copies of the work plan for soil excavation at SWMU 17. The third copy was hand delivered to Ms. Christine Kump-Mitchell of the St. Louis Regional Office during her site visit on October 27.

As discussed with you previously, we plan to begin the work on November 7, 2005. As requested, Ms. Kump-Mitchell will be contacted regarding the time when actual soil excavation will begin.

Please contact me if you need additional information.

Sincerely,

Joe Haake

Joseph W. Haake, Group Manager
Environmental and Hazardous Materials Services
Dept. 107E, Bldg. 111, Mailcode S111-2491
(314) 777-9181

cc: Ms. Jill Bruss, MDNR, Permits Section
Ms. Christine Kump-Mitchell, MDNR, Permits Section
Ms. Stephanie Doolan, U.S. EPA, Region VII

INTERIM ACTION REMEDIAL EXCAVATION WORK PLAN

Solid Waste Management Unit 17
McDonnell Douglas,
Hazelwood, Missouri

Prepared for:
The Boeing Company
St. Louis, Missouri

October 20, 2005

Prepared by:
MACTEC Engineering and Consulting, Inc.
3199 Riverport Tech Center Drive
St. Louis, Missouri 63043

MACTEC

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GEOLOGIST CERTIFICATION

I, Dennis L. Brinkley, a Missouri Registered Geologist, hereby certify that the attached document was prepared by myself or under my direction.

10/20/05

Dennis L. Brinkley
Missouri Registered Geologist #RG0895

Date

FIGURES

TABLES

1.0 SITE INFORMATION

Solid Waste Management Unit (SWMU) 17 is located on the Boeing Tract 1 Facility and consists of a continuously paved area outside of Building 51 (Figure 1) that was used for tank transfer activities involving recovered perchloroethylene (PCE). Boeing initially began using this unit for PCE recovery operations in 1993. The distillation unit was removed from operation in February 1998; Boeing no longer uses this area for PCE recovery purposes. During the Visual Site Inspection, evidence of past spills in the area where the 350-gallon portable tanks were filled was observed. Asphalt around the transfer area was noted to be damaged.

The referenced waste management activities were used to recover PCE from maskant that was applied to sections of various metal parts. The maskant product was a mixture of rubber-like polymers in a PCE carrier or thinner. This paint-like mixture was applied to metal parts and allowed to dry. As the parts dried, the PCE evaporated and was captured in a vapor recovery hood. Vapors from the hood were discharged to a carbon adsorption unit, where the PCE vapors were separated from the air and then transferred to a condenser, where it was recovered. The recovered PCE flowed to a 55-gallon receiving tank that cycled it into the 750-gallon holding tank. Recovered PCE was then transferred from the 750-gallon holding tank into 350-gallon portable tanks for offsite shipment and recycling.

As part of an RCRA Facility Investigation (RFI) of the Boeing Tract 1 Facility, a total of 25 soil borings have been completed in the vicinity of SWMU 17 to delineate the nature and extent of impact to the subsurface. A total of 40 soil samples were collected for analysis. The samples were selectively analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and total metals. Results of laboratory analysis indicated VOCs consisting primarily of PCE and PCE breakdown components (trichloroethene and dichloroethene) in the soil at the location of SWMU 17 (Figure 1). Laboratory results from soil samples collected in the vicinity of SWMU 17 are presented in Table 1. Additionally, the laboratory results for soil samples collected in the vicinity of SWMU 17 to a depth of 10 feet have been plotted on three-foot depth intervals as shown on Figures 2 through 4.

2.0 INTERIM ACTION

As an interim action, Boeing will retain a qualified hazardous waste excavation contractor to excavate soil in an area at the location of SWMU 17 (Figure 1). The excavated soil will be characterized and appropriately disposed of at an off-site location. The objective of the interim action is to remove PCE impacted soil that could be a source of VOCs to shallow groundwater. A Corrective Measures Study (CMS) will subsequently be prepared for the Boeing Tract 1 Facility to evaluate the need for additional remedial activities for soil and groundwater at the Site.

2.1 Waste Characterization

Based on the known operations conducted at SWMU 17 along with the results of laboratory analysis, PCE is the primary constituent present in the soil. The land disposal restriction (LDR) for PCE is 60 milligrams per kilogram (mg/kg) (10 times the universal treatment standard of 6 mg/kg). The toxicity characteristic (TC) regulatory limit for PCE is 0.7 milligrams per liter (mg/L) based on the Toxicity Characteristic Leaching Procedure (TCLP) method. The regulatory limit can be assumed to be 14 mg/kg by total PCE analysis (to account for the 20:1 dilution used in TCLP).

2.1.1 Preliminary Sampling

2.1.1.1 Waste Characterization Sampling

A total of 12 soil borings will be installed using a Geoprobe in a systematic grid pattern in the area of Interim Measure excavation (Figure 1) in order to characterize the extent of VOCs in soil to assist in waste profiling and segregation of soil into stockpiles. Three grab soil samples will be collected from each boring, one from the 0 to 4 feet below ground surface (bgs) zone; and one from the 4 to 7 feet bgs zone; one from the 7 to 10 feet bgs zone. Representative portions of soil from each zone exhibiting the highest field screening indication of impact will be submitted for VOC analysis by EPA Method 5035/8260. Split samples will be retained from each sampling location for compositing and waste characterization laboratory analysis depending on the results of the preliminary sampling. Soil samples will be analyzed on an expedited turn around to ensure that method holding times are not exceeded.

2.1.1.2 Sidewall Sampling

To evaluate the soil remaining at the boundary of the Interim Action excavation, 10 soil borings will be installed using a Geoprobe (i.e. one soil boring from each 40 foot width of the excavation and four from each 100 foot length of the excavation, Figure 1). Grab soil samples from each boring exhibiting the highest field screening indication of impact will be submitted for VOC analysis by EPA Method 5035/8260.

2.1.2 Waste Characterization Analysis

Waste characterization will occur following receipt of the preliminary soil sample results. If the results of the preliminary sampling for a zone (or contiguous portion of a zone) are below the LDR then a composite of the samples from the zone (or contiguous portion of a zone) will be analyzed for waste characterization analysis by TCLP VOCs, pH, flashpoint, and paint filter. Otherwise, waste characterization will occur following excavation of the soil and consist of systematic sampling of stockpiled soil. As described in Section 2.2, the stockpiled soil will be segregated based on field screening. Four soil samples will be collected using a hand auger from each 200 cubic yards of stockpiled soil; these samples will be composited and submitted for waste characterization analysis

2.2 Remedial Excavation

The area of excavation will be approximately 100 feet long (east-west) by 40 feet wide (north-south). The excavation will be extended to a depth of up to 10 feet bgs as conditions allow (slope stability, groundwater inflow, etc.).

2.2.1 Site Preparation

Site preparation will consist of the following items:

- Clearing rubble and debris off of the concrete building floor slabs of demolished Buildings 51 and 52;
- Removing any protrusions (piping, rebar, etc.) from the floor slab which could puncture the stockpile liner;
- Locate previous sampling points and establish grid system (10 foot by 10 foot squares) to guide remedial excavation;
- Investigation/closing of underground utilities in the vicinity of the proposed excavation;
- Breaking and removal of concrete and asphalt covering the excavation area with a tracked excavator;
- Disposal of the concrete and asphalt as construction debris;

2.2.2 Stockpile Construction

Two areas have been identified for stockpiling of soil removed from the excavation as shown on Figure 1. These areas consist of concrete floor slab of the previously demolished Building 51. Soil will be segregated by field screening with a PID, with the more impacted soil consolidated into the stockpile area closest to the remedial excavation and the less impacted soil consolidated in the other stockpile areas. Soil removed from the excavation will be placed on a double layer of 4 mil plastic sheeting. As required by weather conditions or minimally at the end of each work day, the stockpiled soil will be completely covered with 6 mil plastic sheeting weighted with sandbags. The stockpiles will extend no closer than five feet to the edge of the concrete slab. The stockpiles will not be more than approximately 6 feet in height and will be crowned to prevent ponding of rainwater on top of the plastic covering. Each 200

cubic yard section of stockpile will be delineated by paint, stakes and/or flagging and sampled as detailed in Section 2.1.1. Soil sample locations will be marked and labeled with flagging or stakes.

2.2.3 Remedial Excavation

Following the removal of the concrete and asphalt, the uppermost zone above groundwater (approximately 0 to 5 feet bgs) will be excavated, field screened and either loaded directly into trucks for disposal or stockpiled. Excavation of soil below groundwater (approximately five feet bgs) will be conducted in a manner to allow water within the soil to drain by consolidating within the excavation and by addition of a drying agent as necessary. Soil containing free liquids will not be loaded for transportation or placed in the stockpile areas. A commercial drying agent commonly used for moisture amendment on construction projects (CalciMent or equal) will be used to remove the free liquid.

2.2.4 Dewatering

Dewatering of the excavation will be conducted as needed utilizing trash pumps to pump water collected in the excavation into 20,000-gallon steel tanks. The 20,000-gallon tanks will be rented and placed near the excavation to limit the amount of hose needed. The water within the tanks will be tested and a disposal plan developed for the water based on those results. Following disposal of the water, sediment will be removed from the tanks, tested and properly disposed.

2.2.5 Disposal

Un-impacted concrete and asphalt will be transported and disposed off-site as construction debris. Soil that does not exceed the characteristic criteria for a hazardous waste will be transported and disposed as a special waste at a licensed special waste landfill. Soil that exceeds the characteristic criteria for a hazardous waste but does not exceed the LDR will be transported and disposed as a hazardous waste at a licensed hazardous waste landfill. Soil that exceeds the LDR will be transported for thermal treatment and disposal at a licensed treatment and disposal facility.

2.2.6 Hydrogen Release Compound (HRC®) Amendment

Following completion of the remedial excavation, 8,000 pounds of HRC (267 buckets at 30 pounds each) will be added to the bottom of the excavation (18 pounds per square yard). The HRC will be heated and placed with the trackhoe bucket. The HRC will be mixed into the bottom 6-inches of soil in the excavation (10 to 10.5 feet bgs) using the teeth of the bucket.

HRC is a proprietary polylactate ester manufactured by Regenesis, Inc. that is specially formulated for slow release of lactic acid upon contact with water in the subsurface environment. Lactic acid can be metabolized by native microbes to hydrogen, which is a suitable for electron donor for the reductive dechlorination process.

2.2.7 Backfill

The remedial excavation will be backfilled with a 1-inch clean (no fines) limestone rock from the base of the excavation to 2 feet bgs. Compaction of the clean rock backfill will consist of tamping with the

excavator bucket and tracking over the backfill with the excavator. Prior to placement of the clean rock backfill the excavation will be lined with a geotextile nonwoven filter fabric to separate the backfill from the native soil and to limit the infiltration of fines into the backfill, the geotextile fabric will also be placed over the top of the clean rock. The upper two feet of the excavation will be backfilled with a one foot thick layer of clay soil beneath a top layer of one foot of 3/8-inch minus crushed limestone rock. The upper materials will be placed in 4-inch thick lifts and compacted to 90 percent of maximum dry density.

2.2.8 Monitoring Wells and Piezometers

Existing piezometers and monitoring wells outside the area of excavation will be protected from damage during the interim action; soil will not be stockpiled on/above the existing piezometers and wells. Piezometers within the excavation (TP-1 and TP-2) will be completely removed by the excavation and will not be replaced. The monitoring well (MW-7S) located within the excavation will be converted to an observation well within the backfill. Depending on field conditions and construction requirements, the stainless steel well will be protected from damage and retained in-place or removed and replaced in the same vicinity during backfilling. Granular bentonite will be placed around the well casing two feet above the well screen to prevent migration of surface water along the well casing. A flush mount well box set in a 2-foot square concrete pad will be constructed at the surface following completion of remedial activities.

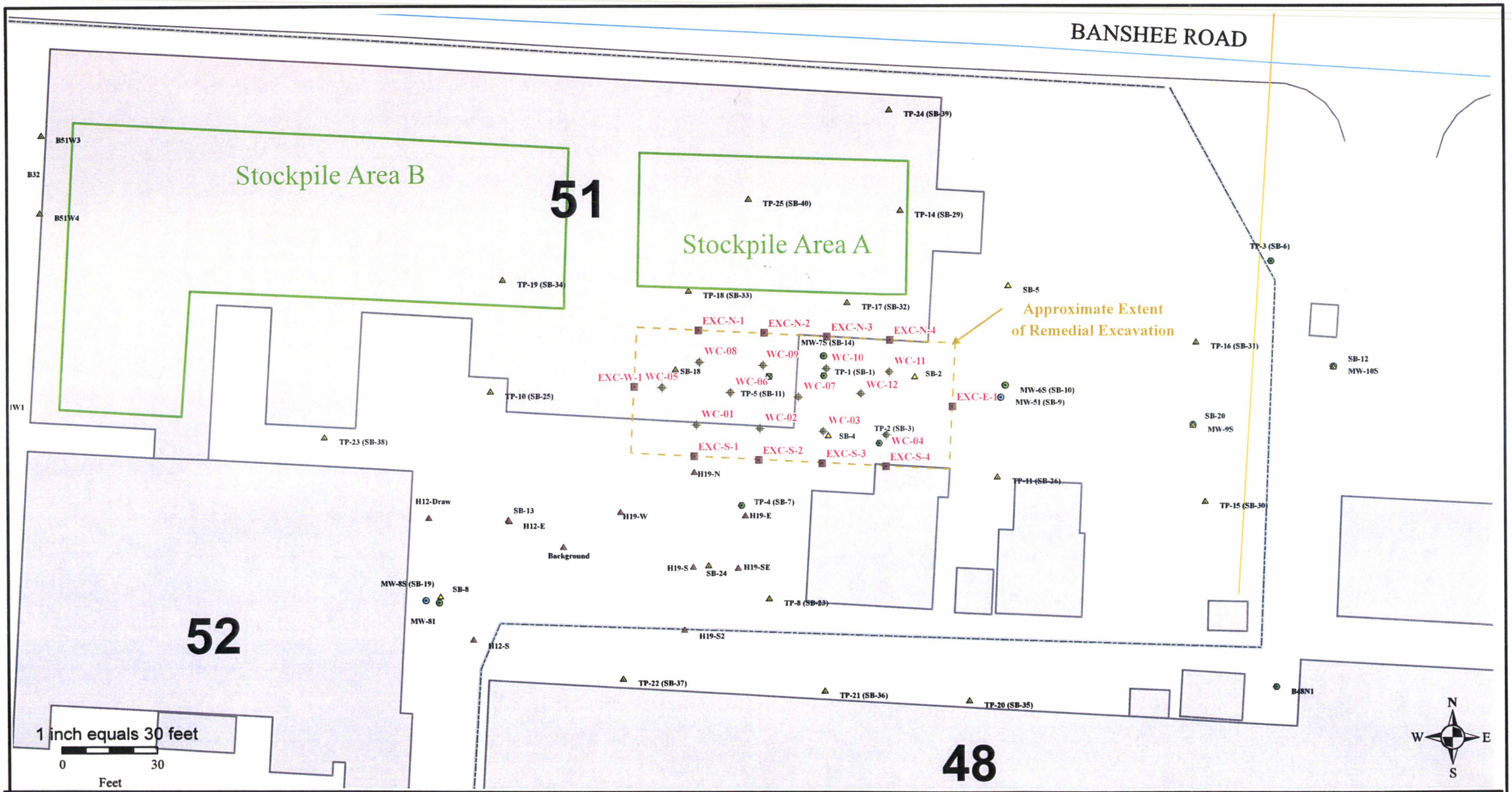
2.2.9 Site Cleanup

Following removal of the stockpile soil and plastic sheeting, all stockpile areas and the area immediately surrounding the excavation will be swept with a mechanical sweeping machine and all soil/debris will be collected for proper disposal following appropriate testing.

3.0 REPORTING

Following completion of the interim action, a report will be completed that documents the remedial excavation, including a summary of site activities, laboratory analysis, and waste disposal. Copies of the laboratory reports and chain-of-custody forms, along with waste disposal manifests will also be included in the report.

FIGURES



Legend

- Abandoned Shallow Piezometer
- Intermediate Well
- Other Shallow Boring
- RCRA Closure Shallow Boring
- RFI Shallow Boring
- RFI Shallow Boring/Temp. Piezometer
- Shallow Piezometer
- Shallow Well
- Waste Characterization Soil Sampling Location
- Sidewall Soil Sampling Location
- Natural Gas Line
- Water Line
- Fence
- Stockpile Area
- Remedial Excavation

Drawn by: KLC Approved by: DLB

Checked by: DLB Date: September 18, 2005

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Figure 1
Interim Action Remedial Excavation
SWMU 17
Boeing Tract 1 South
Hazelwood, Missouri

P:/1_Gis/3250035046/apr/mxd/SWMU17Interim-Excavation-Figure1Revised.mxd

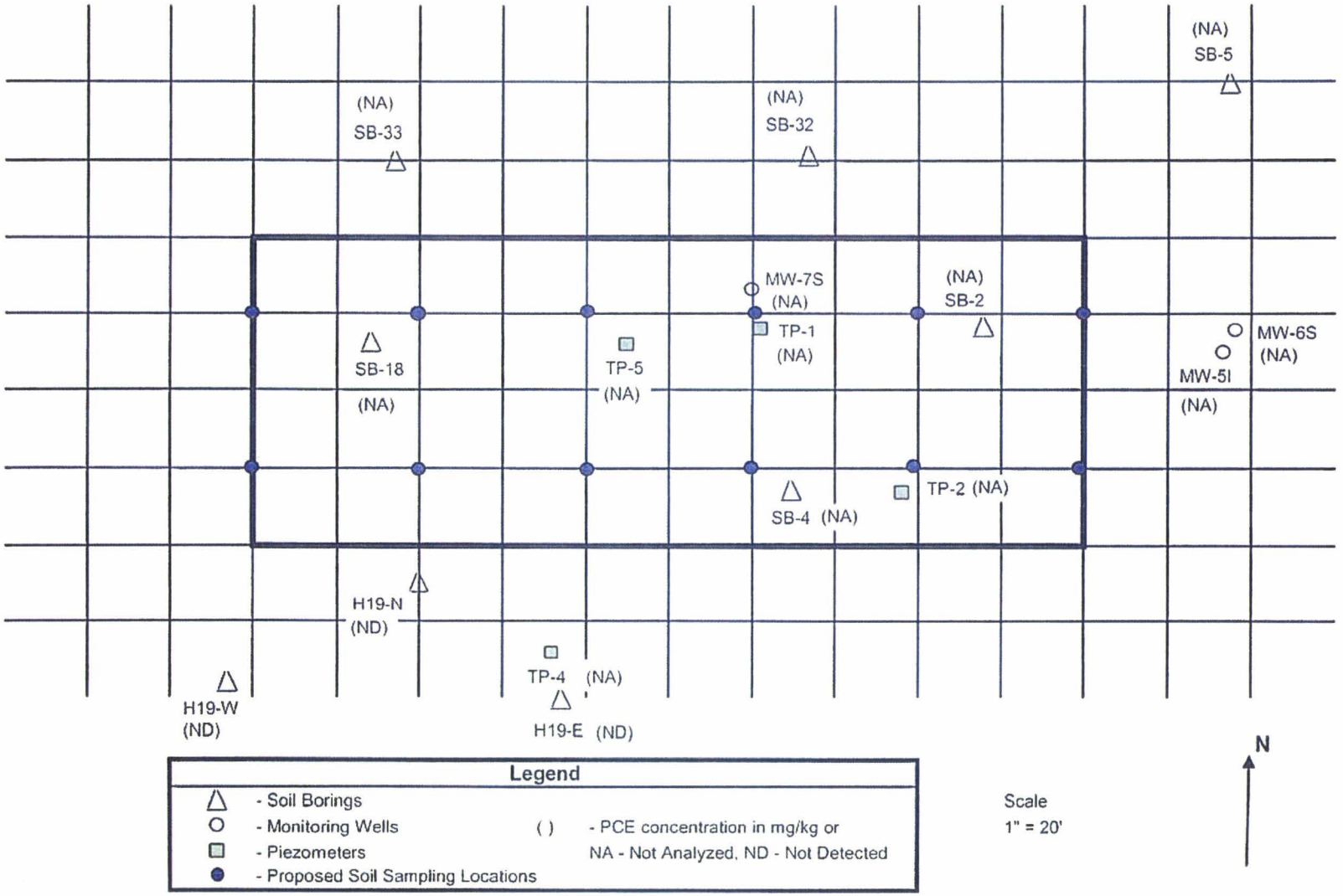

Figure 2
Results of Soil Analysis Depth 0 to 3 Feet Below Ground Surface
SWMU 17, Boeing Tract 1 South, Hazelwood, Missouri

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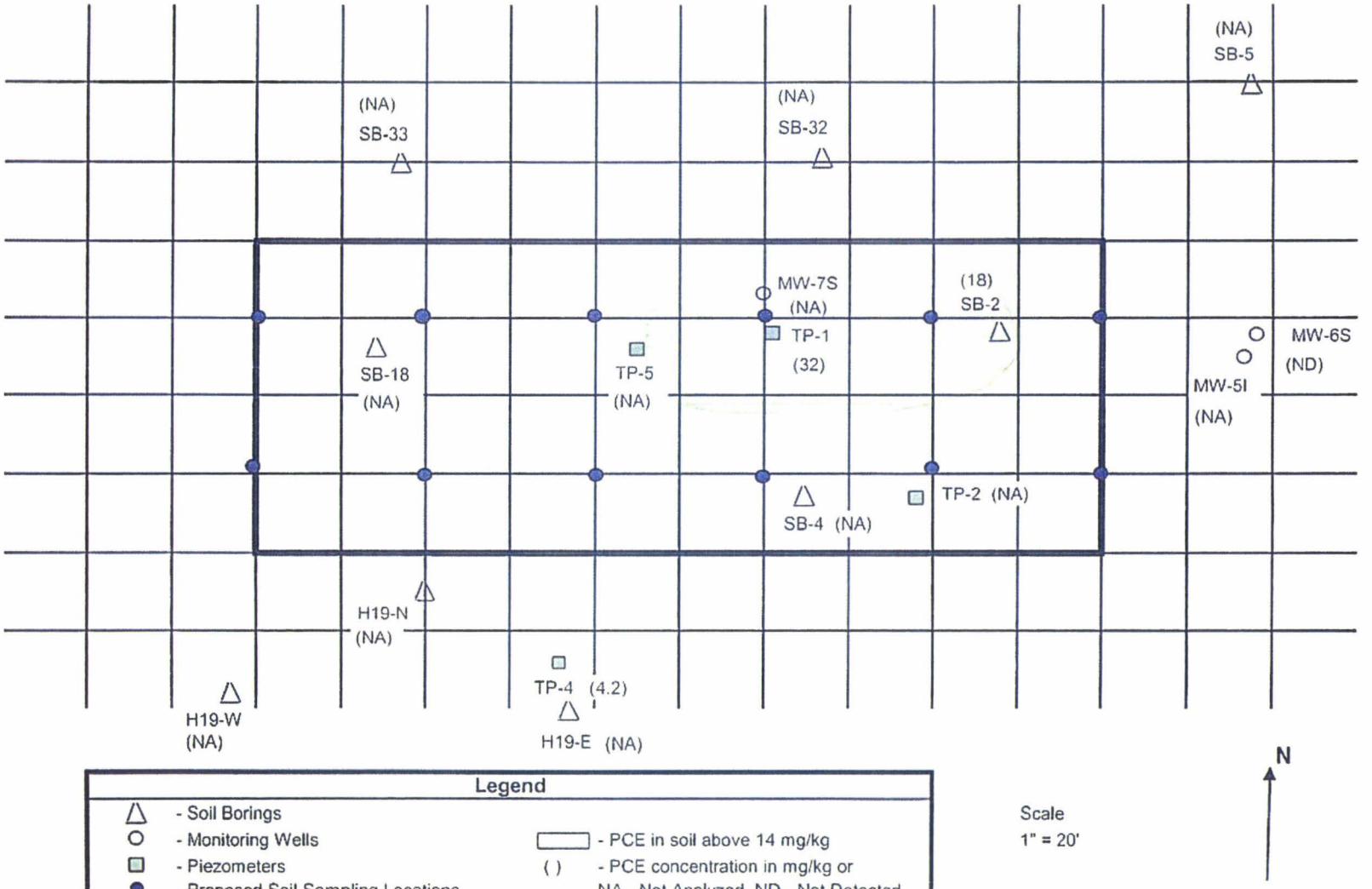

Figure 3
Results of Soil Analysis Depth 3 to 6 Feet Below Ground Surface
SWMU 17, Boeing Tract 1 South, Hazelwood, Missouri

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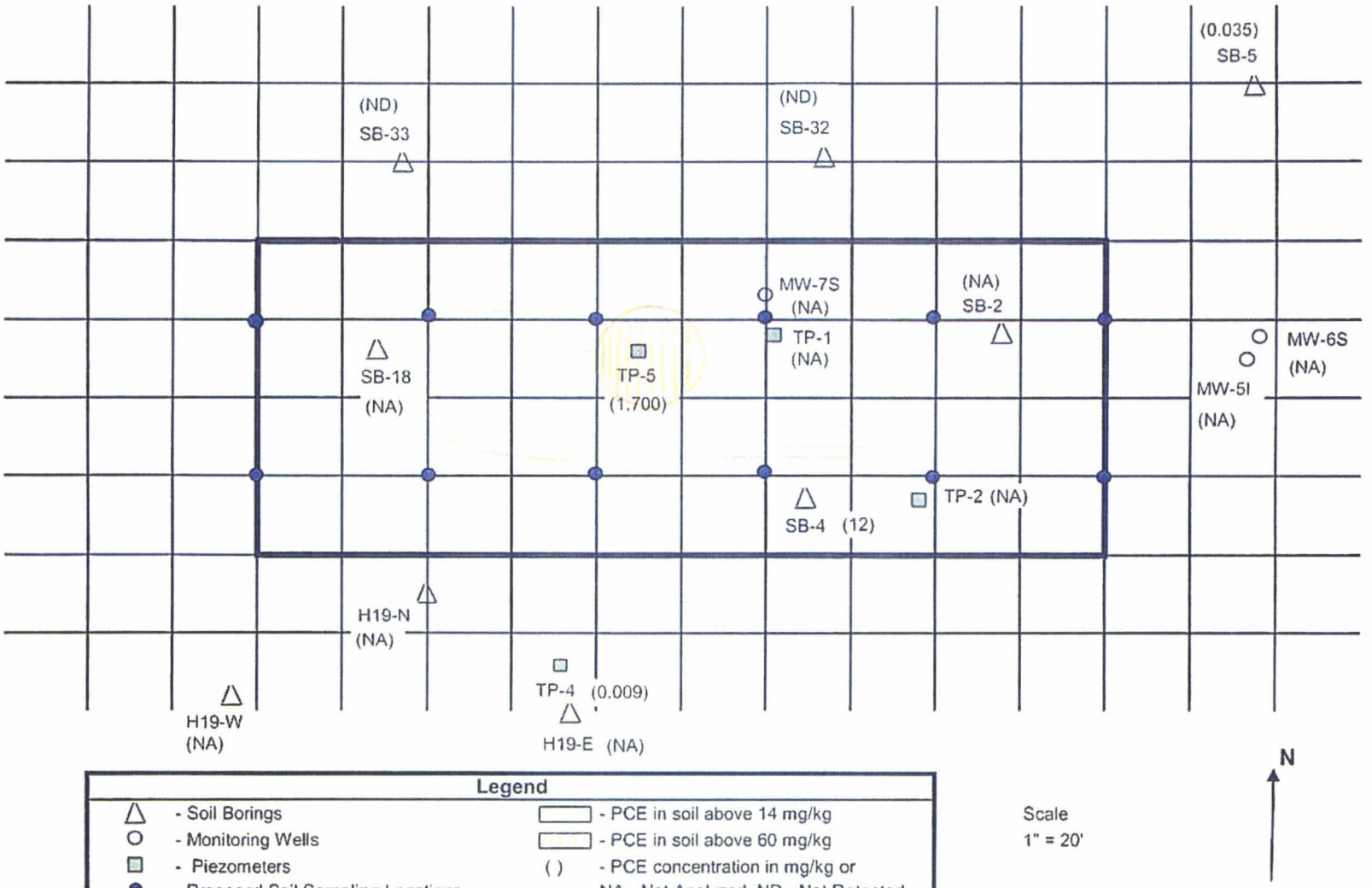

Figure 4
Results of Soil Analysis Depth 6 to 10 Feet Below Ground Surface
SWMU 17, Boeing Tract 1 South, Hazelwood, Missouri

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TABLE 1

Table 1 **Detections in Soil, Boeing Tract 1 RFI Organic and Inorganic Analysis, SWMU 17 Vicinity (Page 1 of 3)**

Parameters	Units	H19-E 0.5-1	H19-N 0.5-1	H19-W 2.5-3	MW-7S-14	SB-1 2.5-4	SB-1 2.5-4 Dup	SB-1 12-13	SB-1 16-17	SB-2 3-4.5	SB-2 11-12.5	SB-3 10.5-11.5	SB-4 6-7	SB-4 11.5-13.5	SB-4 14-16	SB-5 5.5-7	SB-5 14-16
		12/6/1993	12/6/1993	12/6/1993	12/4/2000	2/4/1998	2/4/1998	2/4/1998	2/4/1998	2/4/1998	2/4/1998	2/4/1998	2/4/1998	2/4/1998	2/4/1998	2/5/1998	2/4/1998
Volatile Organic Compounds (VOCs)																	
1,1,2-Trichloroethane	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6.5	NA
1,1-Dichloroethene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6.5	NA
1,2,4-Trimethylbenzene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (Total)	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	µg/kg	ND	ND	ND	NA	**240**	< 1,600	**21**	**20**	**25**	< 13	**16**	**27**	< 14	**400**	**42**	< 77
Chloroethane	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 13	NA
Cis-1,2-Dichloroethene	µg/kg	ND	ND	ND	NN	< 3,200	< 180	**22**	**88**	< 6.5	**46**	**24**	**13**	**760 E**	**11,900**	< 6.5	**280**
Dichlorodifluoromethane	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	µg/kg	ND	ND	ND	**2,700**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 8.8	NA
Isopropyl Benzene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M,P-Xylene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 18	NA
Methyl Ethyl Ketone (MEK)	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 13	NA
Methylene Chloride	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6.5	NA
Naphthalene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Butylbenzene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Propylbenzene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-Xylene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 8.8	NA
P-Isoprropyltoluene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butlybenzene	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	µg/kg	ND	ND	ND	NA	**24,000**	**32,000**	**9,100**	**58,000**	**18,000**	**1,100**	**3,000**	**12,000**	**200,000**	**240,000**	**35**	**3,600**
Toluene	µg/kg	ND	ND	ND	**1,300**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6.5	NA
Trans-1,2-Dichloroethene	µg/kg	ND	ND	ND	NA	**9.6**	**36**	< 6.4	< 6.8	< 6.5	< 6.4	< 6.7	< 6.7	< 7.2	< 19,000	< 6.5	< 38
Trichloroethene (TCE)	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6.5	NA
Vinyl Chloride	µg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 13	NA
Xylenes (Total)	µg/kg	ND	ND	ND	**5,100**	**41**	**230**	< 6.4	**7.7**	< 6.5	< 6.4	< 6.7	< 6.7	**180**	< 19,000	< 6.5	< 38
Total Petroleum Hydrocarbons (TPH)																	
TPH (DRO)	µg/kg	NA	NA	NA	< 3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1,900,000**	NA
TPH (GRO)	µg/kg	NA	NA	NA	< 3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**180,000**	NA
Total TPH	µg/kg	ND	ND	ND	< 3,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2,080,000**	NA
Metals (Total)																	
Arsenic	µg/kg	**2,450**	**2,220**	**3,050**	NA	**10,000**	< 6.4	**20,000**	**15,000**	**10,000**	**11,000**	< 6,600	**20,000**	< 7,200	**9,700**	NA	< 7,600
Barium	µg/kg	**9,350**	**3,370**	**9,330**	NA	**210,000**	**160**	**100,000**	**110,000**	**310,000**	**80,000**	**170,000**	**130,000**	**79,000**	**86,000**	NA	**82,000**
Cadmium	µg/kg	**740**	**750**	**730**	NA	< 630	< 0.64	**650**	< 680	**880**	< 630	< 660	< 670	< 7,200	< 750	NA	< 7,600
Chromium	µg/kg	**67,500**	**40,400**	**9,660**	NA	**19,000**	**18**	**21,000**	**21,000**	**22,000**	**12,000**	**14,000**	**21,000**	**13,000**	**13,000**	NA	**12,000**
Lead	µg/kg	**7,000**	**22,000**	<4,000	NA	**15,000**	**8.5**	**13,000**	**11,000**	**11,000**	**11,000**	**8,900**	**16,000**	**9,800**	**7,500**	NA	**9,000**
Mercury	µg/kg	<50	<50	<50	NA	< 300	**0.48**	**50**	**560**	**540**	**520**	**530**	**550**	**550**	**550**	NA	**50**
Selenium	µg/kg	<1,300	<1,000	<1,500	NA	**1,200**	**1.4**	**1,000**	< 680	**860**	< 630	< 660	< 670	**720**	< 740	NA	**1,600**
Silver	µg/kg	**3,250**	**2,510**	3,200	NA	< 1,300	< 1.3	< 1,300	< 1,400	< 1,300	< 1,300	< 1,300	< 1,300	< 1,400	< 1,500	NA	< 1,500

Notes:

µg/kg - micrograms per kilogram
DRO - Diesel range organics
GRO - Gasoline range organics
< - Constituent not detected above this value
NA - Not Analyzed
(1) Total TPH

J - Estimated value
B - constituent found in blank
E - Actual value is known to be greater than the upper calibration range.
-- - ITL has not been determined for this constituent
ND - Not Detected

Table 1 **Detections in Soil, Boeing Tract 1 RFI Organic and Inorganic Analysis, SWMU 17 Vicinity (Page 2 of 3)**

Parameters	Units	SB-7 3.5-4.5	SB-7 7.5-8.5	SB-7 31.5-32.5	SB-9 26-27	SB-9 26-27 Dup	SB-9 34-35	SB-9 41-42	SB-9 44-45	SB-10 4-5	SB-10 10.5-11.5	SB-10 14-15	SB-18-11	SB-18-15	SB-23-8
		2/6/1998	2/6/1998	2/6/1998	4/21/1998	4/21/1998	4/21/1998	4/21/1998	4/21/1998	4/20/1998	4/20/1998	4/20/1998	12/5/2000	12/5/2000	9/5/2001
Volatile Organic Compounds (VOCs)															
1,1,2-Trichloroethane	µg/kg	< 6.6	< 6.4	< 6.5	180	380	18	< 6.5	< 6.5	< 6.3	< 6.3	< 7.4	< 5	< 50	< 50
1,1-Dichloroethene	µg/kg	< 6.6	< 6.4	< 6.5	< 6.2	< 6.2	< 6.2	< 6.5	< 6.5	< 6.3	< 6.3	< 7.4	< 5	< 50	< 50
1,2,4-Trimethylbenzene	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5	35 J	< 50
1,2-Dichloroethene (Total)	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	140	68,000	NA
Acetone	µg/kg	68	35	50	39	48	40	16	34	26	< 13	180	< 10	130	< 2,500
Chloroethane	µg/kg	< 13	< 13	< 13	< 12	< 12	< 12	< 13	< 13	< 13	< 13	< 15	< 10	94 J	< 50
Cis-1,2-Dichloroethene	µg/kg	< 6.6	< 6.4	< 6.5	160	110	< 6.2	< 13	17	< 6.3	< 6.3	< 7.4	140	68,000	< 50
Dichlorodifluoromethane	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 10	< 100	< 50
Ethylbenzene	µg/kg	13	< 6.4	< 6.5	< 6.2	< 6.2	< 6.2	< 6.5	< 6.5	< 6.3	< 6.3	< 7.4	< 5	400	< 50
Isopropyl Benzene	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5	< 50	< 50
M,P-Xylene	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5	1,600	NA
Methyl Ethyl Ketone (MEK)	µg/kg	82	52	49	< 12	< 12	< 12	< 13	< 13	< 13	< 13	50	< 10	< 100	3,600
Methylene Chloride	µg/kg	6.7	6.5	6.9	19 B	26 B	22 B	18 B	16 B	24	< 6.3	69	8 B	43 JB	< 250
Naphthalene	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5	< 50	< 50
N-Butylbenzene	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5	< 50	< 50
N-Propylbenzene	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5	< 50	< 50
O-Xylene	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5	540	NA
P-Isoprropyltoluene	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 50
Sec-Butlybenzene	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5	< 50	< 50
Tetrachloroethene (PCE)	µg/kg	4,200	9.7	7.7	< 6.2	< 6.2	< 6.2	8	8.1	< 6.3	< 6.3	< 7.4	800	9,300,000	< 50
Toluene	µg/kg	20	< 6.4	< 6.5	< 6.2	< 6.2	< 6.2	< 6.5	< 6.5	< 6.3	< 6.3	< 7.4	< 5	1,600	< 250
Trans-1,2-Dichloroethene	µg/kg	< 6.6	< 6.4	< 6.5	< 6.2	< 6.2	< 6.2	< 6.5	< 6.5	< 6.3	< 6.3	24	< 5	< 5000	< 50
Trichloroethene (TCE)	µg/kg	44	< 6.4	< 6.5	12,000	8,200	39	1,800	7,900	9.3	64	28	90	14,000	< 50
Vinyl Chloride	µg/kg	< 13	< 13	< 13	< 12	< 12	< 12	< 13	< 13	< 13	< 13	< 15	< 10	63 J	< 50
Xylenes (Total)	ug/kg	< 6.6	< 6.4	< 6.5	< 6.2	< 6.2	< 6.2	< 6.5	< 6.5	< 6.3	< 6.3	< 7.4	< 5	2,100	< 150
Total Petroleum Hydrocarbons (TPH)															
TPH (DRO)	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	310,000
TPH (GRO)	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total TPH	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	310,000
Metals (Total)															
Arsenic	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

µg/kg - micrograms per kilogram
DRO - Diesel range organics
GRO - Gasoline range organics
< - Constituent not detected above this value
NA - Not Analyzed
(1) Total TPH

J - Estimated value
B - constituent found in blank
E - Actual value is known to be greater than the upper calibration range.
-- - ITL has not been determined for this constituent

Table 1 **Detections in Soil, Boeing Tract 1 RFI Organic and Inorganic Analysis, SWMU 17 Vicinity (Page 3 of 3)**

Parameters	Units	SB-24-8	SB-26-6	SB-29-8	SB-32-8	SB-33-7	SB-35-6	SB-36-3	SB-37-6	SB-39-6	SB-39-6 Dup	SB-40-6	SB-40-6 Dup	TP-5-15	TP-5-7
		9/5/2001	9/5/2001	9/6/2001	9/6/2001	9/6/2001	10/15/2001	10/15/2001	10/15/2001	10/15/2001	10/15/2001	10/15/2001	10/15/2001	12/4/2000	12/4/2000
Volatile Organic Compounds (VOCs)															
1,1,2-Trichloroethane	µg/kg	< 50	< 250	< 5	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	< 5	< 50
1,1-Dichloroethene	µg/kg	< 50	< 250	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**200**	< 50
1,2,4-Trimethylbenzene	µg/kg	< 50	< 250	< 5	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	< 5	< 50
1,2-Dichloroethene (Total)	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**57,000**	**500**
Acetone	µg/kg	< 2,500	< 12,000	< 250	< 250	< 250	NA	NA	NA	NA	< 250	NA	< 250	**130**	< 100
Chloroethane	µg/kg	< 50	< 250	< 5	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	< 10	**48 J**
Cis-1,2-Dichloroethene	µg/kg	< 50	< 250	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**57,000**	**500**
Dichlorodifluoromethane	µg/kg	< 50	< 250	< 5	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	< 10	< 100
Ethylbenzene	µg/kg	< 50	< 250	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**49**	< 50
Isopropyl Benzene	µg/kg	< 50	< 250	< 5	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	< 5	< 50
M,P-Xylene	µg/kg	NA	NA	NA	NA	NA	< 5	< 5	< 5	< 5	NA	< 5	NA	**140**	< 50
Methyl Ethyl Ketone (MEK)	µg/kg	**4,200**	< 12,000	< 250	< 250	< 250	NA	NA	NA	NA	< 250	NA	< 250	< 10	< 100
Methylene Chloride	µg/kg	< 250	< 1,200	< 25	< 25	< 25	< 5	< 5	< 5	< 5	< 25	< 5	< 25	**5 B**	**28 JB**
Naphthalene	µg/kg	< 50	< 250	< 5	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	< 5	< 50
N-Butylbenzene	µg/kg	< 50	< 250	< 5	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	< 5	< 50
N-Propylbenzene	µg/kg	< 50	< 250	< 5	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	< 5	< 50
O-Xylene	µg/kg	NA	NA	NA	NA	NA	< 5	< 5	< 5	< 5	NA	< 5	NA	**42**	< 50
P-Isoprropyltoluene	µg/kg	< 50	< 250	< 5	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	NA	NA
Sec-Butlybenzene	µg/kg	**97**	< 250	**27**	< 5	< 5	NA	NA	NA	NA	< 5	NA	< 5	< 5	< 50
Tetrachloroethene (PCE)	µg/kg	< 50	< 250	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**440 J**	**1,700,000**
Toluene	µg/kg	< 250	< 1,200	< 25	< 25	< 25	< 5	< 5	< 5	< 5	< 25	< 5	< 25	**650**	< 50
Trans-1,2-Dichloroethene	µg/kg	< 50	< 250	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**7,200**	< 50
Trichloroethene (TCE)	µg/kg	< 50	< 250	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	**1,900**	**2,200**
Vinyl Chloride	µg/kg	< 50	< 250	< 5	< 5	< 5	**9.6**	< 5	< 5	< 5	< 5	< 5	< 5	**560 J**	< 100
Xylenes (Total)	ug/kg	< 150	< 750	< 15	< 15	< 15	NA	NA	NA	NA	< 15	NA	< 15	**180**	< 50
Total Petroleum Hydrocarbons (TPH)															
TPH (DRO)	µg/kg	**270,000**	**1,400,000**	**970,000**	**88,000**	**5,500**	< 5,000	< 5,000	< 5,000	< 5,000	NA	< 5,000	< 4,000	NA	NA
TPH (GRO)	µg/kg	NA	NA	NA	NA	NA	< 5,000	< 5,000	< 5,000	< 5,000	NA	< 5,000	< 4,000	NA	NA
Total TPH	µg/kg	**270,000**	**1,400,000**	**970,000**	**88,000**	**5,500**	< 5,000	< 5,000	< 5,000	< 5,000	NA	< 5,000	< 4,000	NA	NA
Metals (Total)															
Arsenic	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	µg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

µg/kg - micrograms per kilogram
DRO - Diesel range organics
GRO - Gasoline range organics
< - Constituent not detected above this value
NA - Not Analyzed
(1) Total TPH

J - Estimated value
B - constituent found in blank
E - Actual value is known to be greater than the upper calibration range.
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